

# The future of freight

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**BPA Conference, 10 October 2018**

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# An economist on economic forecasting

*'The only function of economic forecasting is to make astrology look respectable'*  
(JK Galbraith)



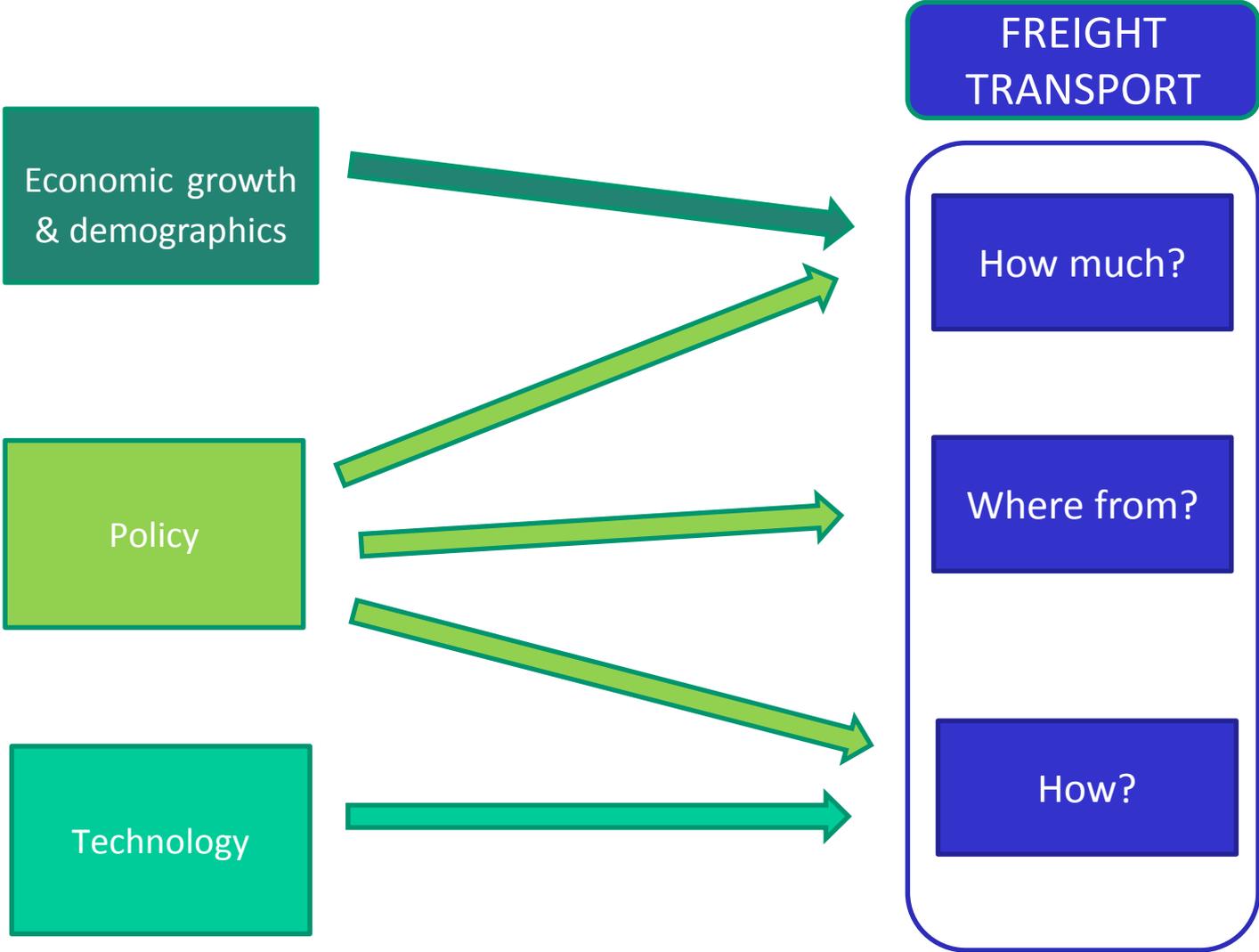
## Summary

- Personal view of the future of freight transport, relating it to UK ports
- Ports & inland transport
- Time horizon: 2030
- Jumping ahead, beyond short-term political uncertainty

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# The key drivers of the future of freight



# The policy agenda (1): the balance between economy & environment

- **Environment:**
  - Carbon emissions & global warming
  - Pollutants' impact on human health
- **Economy:**
  - Need for greater economic efficiency: freight transport is a cost of production
  - Impact of congestion on productivity
  - Need to maintain tax revenue
  - Immigration policy & labour markets



**Non-UK EU labour:**

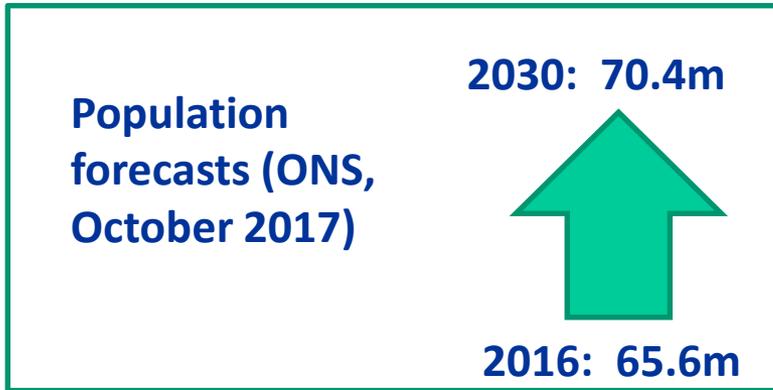
- 13% of HGV drivers
- 26% of warehouse operatives

*Source: FTA*

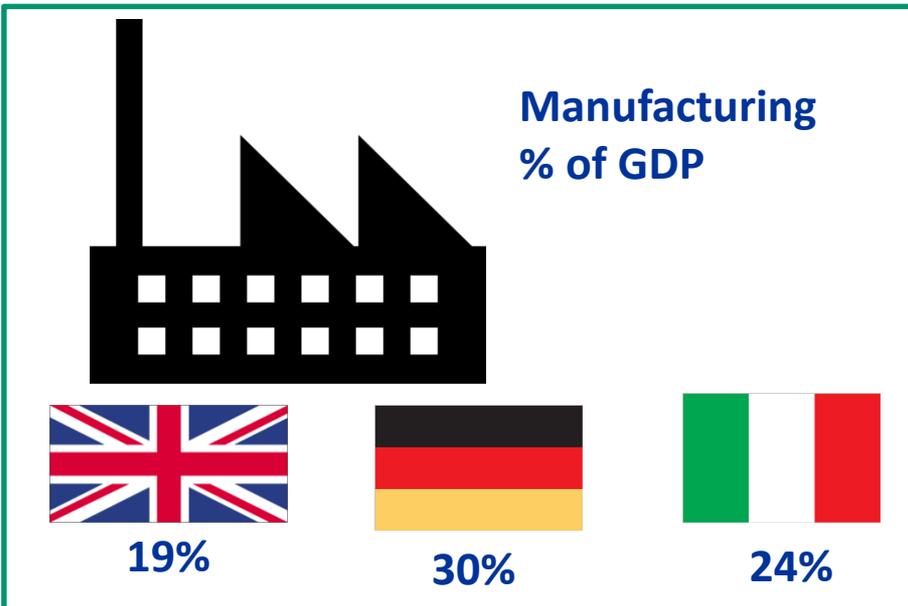
## The policy agenda (2): air quality

- The issue: transport now represents 50% of UK's NOx emissions, including 11% from ship calls in UK ports (source: DEFRA)
- Emerging policy measures:
  - Ban on sale of petrol & diesel-powered cars & vans by 2040
  - 'Long term goal' is for zero emission HGVs
  - 'Ambition' to remove diesel locomotion from rail by 2040
  - London & 28 local authorities required to develop local plans to address air quality issues (Clean Air Zones)
  - SECA in Irish Sea? (DEFRA consultation, March 2019)
  - Air Quality Strategies for major English ports by May 2019

# How much? Economy & demographics



- UK is a 'post-industrial' economy, with 80% of GDP based on services
- Well-integrated into the European and wider global economy
- Projected population growth of 7.3% for 2016-29
- Possible industrial renaissance, based on advanced manufacturing?



# How much? UK port traffic forecasts to 2030

Million tonnes

	2016 Actual	2017 Actual	2030 Forecast	Forecast CAGR 2016-30
Bulk Liquids	191	189	156	-1.5%
Dry Bulks	93	92	70	-2.0%
Semi-bulks	17	19	23	+2.1%
Ro-ro	106	107	135	+1.8%
Lo-lo	65	64	89	+2.3%
Total	473	471	473	-

- Trend-based 'business as usual' trade forecasts with 2016 base year
- Adjusted for near disappearance of steam coal & some increase in biomass
- Assuming long term decline in bulk liquids and reflecting 40% cut in North Sea production by 2030 (source Oil & Gas Authority)
- Does not take into account future economic shocks

# Where from?

## Localised manufacturing?



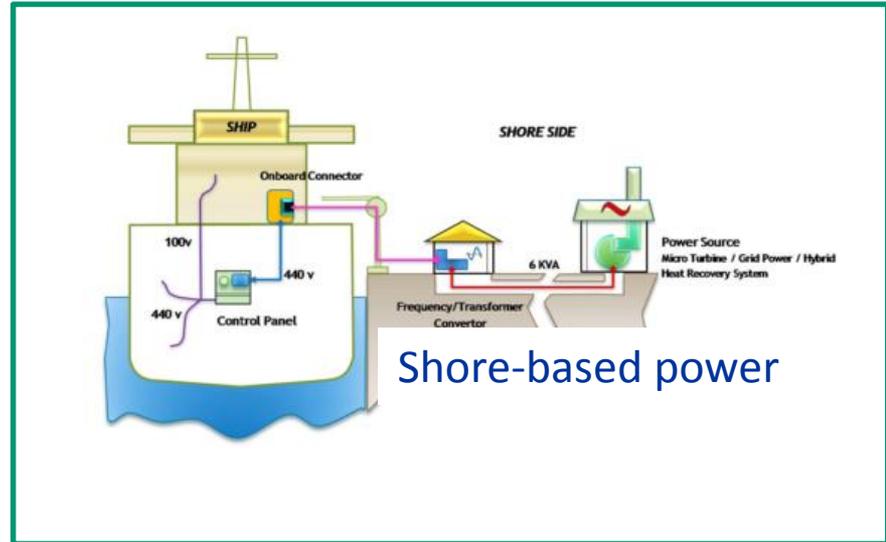
- 3D printing/additive manufacturing will gain market share but only in niche markets (e.g. spare parts)
- Increasing customisation of goods
- Some re-shoring possible, but unlikely to be significant

## Mass/lean production & shipping



- UK will remain an open, trading economy
- Economies of scale of mass/lean manufacturing remain powerful for most manufactured goods
- Facilitated by container shipping industry
- New Silk Road rail services could take some market share, but capacity limited
- Switch to non-EU sources & more focus on PCD & FTZs

# How? Technology for port operations – already capital intensive



# How? Road freight – lowering emissions & reducing costs

- Positive impact of Euro VI engines, but still diesel emissions
- Full-scale deployment of longer HGVs (15.65m) to secure economies of scale
- Autonomous HGVs:
  - Limited to platooning, but how to share cost reductions?
  - Limited to motorways & dual carriageways?
- Electric battery HGVs – will Tesla Semi really achieve 500 mile range?
- Increasing full-scale trials of e-highways
- ICT/digitisation to increase productivity

Autonomous vehicles



Enhanced range battery electric



E-highways



# How? Rail freight – lowering emissions & reducing costs

- Great deployment of longer intermodal units
- Only hiatus in electrification programme for main lines?
- Greater deployment of hybrid locomotives?
- Threats from:
  - Regionalisation of rail network
  - Passenger service aspirations

50'/15.24m intermodal units: 4 additional pallets



Hybrid locomotives



## Conclusion: freight transport in 2030

*'Optimism means better than reality; pessimism means worse than reality. I'm a realist' (Margaret Atwood)*

- The UK is an open, service-based & increasingly 'green' economy
- However, potential for additional high value added manufacturing – including at ports
- Some switch of focus towards deep sea foreland following departure from the EU
- HGVs: diesel-powered, but more efficient operations to reduce costs & emissions
- Rail freight: lower cost electrification, greater use of electric-diesel hybrid
- Ports/shipping: SECA in Irish Sea & greater use of shore-based power

*'Economics is extremely useful as a form of  
employment for economists.'*

(JK Galbraith)

**Thank you!**

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